---

(54) CONTROL APPARATUS AND METHOD OF ELECTRONIC SYSTEM FOR MOBILE UNIT, ELECTRONIC SYSTEM FOR MOBILE UNIT, AND COMPUTER PROGRAM

(57)Abstract:
PROBLEM TO BE SOLVED: To output voice and image information corresponding to the travel state of a mobile unit in an electronic system for mobile units including an

information-outputting apparatus of a car audio or the like and a navigation apparatus. SOLUTION: The electronic system for mobile units comprises an information-outputting apparatus having an output means for outputting such contents information as voice information, and a navigation apparatus having an input means for inputting a destination, and for performing a navigation operation related to the destination being inputted by the input means. The control apparatus for controlling the electronic system for mobile units comprises a selection means for selecting contents information to be outputted while the mobile unit is traveling until it arrives at the destination according to the destination being inputted by the input means, and an output control means for controlling output means to output the contents information being selected from the selection means during movement.

LEGAL STATUS [Date of request for examination]
[Date of sending the examiner's decision of rejection]
[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]
[Date of final disposal for application]
[Patent number]
[Date of registration]
[Number of appeal against examiner's decision of rejection]
[Date of requesting appeal against examiner's decision of rejection]
[Date of extinction of right]

CLAIMS

[Claim(s)]

[Claim 1] The information output unit equipped with an output means to output the contents information which contains at least one side among speech information and image information, It is the control unit which controls the electronic system for mobiles which comes to contain the navigation equipment which performs navigation actuation concerning the destination which was equipped with the input means which can input the destination in migration of a mobile, and was inputted by this input means. A selection means to choose the contents information which should be outputted during migration of said mobile until it arrives at said destination according to the destination inputted by said input means, The control unit of the electronic system for mobiles characterized by having an output-control means to control said output means to output the contents information chosen by said selection means during migration of said mobile until it arrives at said destination.

[Claim 2] Said selection means is the control unit of the electronic system for mobiles according to claim 1 characterized by choosing 1 or two or more contents information relevant to said inputted destination by searching said inputted destination for the database which associates the name of a place, 1, or two or more contents information which were set up beforehand as a keyword.

[Claim 3] Said selection means is the control unit of the electronic system for mobiles according to claim 2 characterized by choosing said contents information based on the degree of the relation in two or more contents information in relation to the name of a place of at least 1.

[Claim 4] It is the control unit of the electronic system for mobiles according to claim 1 or 2 characterized by controlling said output means to output said two or more contents information in order of the output as which the order of an output in said those output means was determined, and said output-control means was determined by said selection means when said selection means chooses two or more contents information.

[Claim 5] Said selection means is the control unit of the electronic system for mobiles according to claim 4 characterized by determining said order of an output based on the degree of the relation in two or more contents information in relation to the name of a place of at least 1.

[Claim 6] Said selection means is a control unit of the electronic system for mobiles according to claim 4 or 5 with which the thing which has the strong degree of relation with said destination is characterized by determining that it is outputted by said order of an output near said destination among said two or more contents information.

[Claim 7] Said selection means the 1st database which associates the name of a place, 1, or two or more related keywords which were set up beforehand by searching said inputted destination as a keyword 1 or two or more related keywords relevant to said inputted destination are chosen. The 2nd database which associates the related keyword, 1, or two or more contents information which were set up beforehand by

searching said selected, related keyword as a keyword The control unit of the electronic system for mobiles according to claim 1 characterized by choosing 1 or two or more contents information relevant to said selected, related keyword.

[Claim 8] Said selection means is the control unit of the electronic system for mobiles according to claim 7 characterized by choosing said related keyword based on the degree of the relation in two or more related keywords in relation to the name of a place of at least 1.

[Claim 9] Said selection means is the control unit of the electronic system for mobiles according to claim 7 or 8 characterized by choosing said contents information based on the degree of the relation in two or more contents information in relation to the related keyword of at least 1.

[Claim 10] It is the control unit of the electronic system for mobiles according to claim 7 characterized by controlling said output means to output said two or more contents information in order of the output as which the order of an output in said those output means was determined, and said output-control means was determined by said selection means when said selection means chooses two or more contents information.

[Claim 11] Said selection means is the control unit of the electronic system for mobiles according to claim 10 characterized by determining said order of an output based on the degree of the relation in two or more related keywords in relation to the name of a place of at least 1.

[Claim 12] Said selection means is the control unit of the electronic system for mobiles according to claim 10 or 11 characterized by determining said order of an output based on the degree of the relation in two or more contents information in relation to the related keyword of at least 1.

[Claim 13] Said selection means is the control unit of the electronic system for mobiles given in any 1 term of claims 10-13 to which the thing which has the strong degree of relation with said destination is characterized by determining that it is outputted by said order of an output near said destination among said two or more contents information.

[Claim 14] Said selection means is the control unit of the electronic system for mobiles given in any 1 term of claims 7-13 characterized by choosing further 1 relevant to said related keyword of selected 1, or two or more of other related keywords by searching said related keyword of selected 1 for said 1st database as a keyword, after choosing the related keyword of 1.

[Claim 15] It is the control unit of the electronic system for mobiles given in any 1 term of claims 1-14 which said navigation equipment is further equipped with a calculation means to compute the duration to the destination inputted by said input means from the current position of said mobile, and are characterized by said selection means choosing said contents information according to said computed

duration in addition to said destination.

[Claim 16] Said navigation equipment is a control unit of the electronic system for mobiles according to claim 15 characterized by adding modification to the contents information which should be outputted after current time when migration of said mobile is not as planned according to the monitor result have further a monitor means to supervise whether migration of said mobile is as planned, and according [said selection means] to said monitor means.

[Claim 17] The computer program characterized by making it function as a control unit of the electronic system for mobiles given [a computer] in any 1 term of claims 1-16.

[Claim 18] Electronic system for mobiles characterized by coming to contain the control device, said information output unit, and said navigation equipment of the electronic system for mobiles of a publication in any 1 term of claims 1-16.

[Claim 19] The information output unit equipped with an output means to output the contents information which contains at least one side among speech information and image information, It is the control approach which controls the electronic system for mobiles which comes to contain the navigation equipment which performs navigation actuation concerning the destination which was equipped with the input means which can input the destination in migration of a mobile, and was inputted by this input means. The selection process which chooses the contents information which should be outputted during migration of said mobile until it arrives at said destination according to the destination inputted by said input means, The control approach of the electronic system for mobiles characterized by having the output-control process which controls said output means to output the contents information chosen by said selection process during migration of said mobile until it arrives at said destination.

DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention belongs to the control unit of the electronic system for mobiles which comes to contain the navigation equipment for the mobiles the information output unit for the mobiles for [, such as a car audio system,] mount etc., for mount, etc. and the control approach, and the electronic system list for mobiles at the technical field of a computer program.

[0002]

[Description of the Prior Art] In the information output unit for mount of a car audio system or a car stereo, car television, etc., CD (Compact Disc), DVD, MD (Mini Disc),

a cassette tape, etc. are played, with a loudspeaker, a display, etc. which were carried in in the car, a voice output is carried out to in the car, or a video output is carried out. Or a radio beam and a television electric wave are received and it gets over, and it is constituted so that a voice output may be carried out to in the car or a video output may be carried out to it.

[0003] On the other hand, it consists of navigation equipment for mount so that map data, current position data, various advice data, etc. may be displayed with an indicating equipment or the voice output of the advice message for navigation, the warning message, etc. may be carried out by the loudspeaker carried in in the car.

[0004] And it is common to consist of the information output units and navigation equipment for these mount which are carried in in the car [same] so that a display, a loudspeaker, etc. may be made to serve a double purpose.

[0005]

[Problem(s) to be Solved by the Invention] However, the information output unit and navigation equipment for these mount can stop at having the function which became independent mutually, and input data (for example, destination data) or the output data for navigation (for example, the duration to the destination, a path, etc.) cannot be made to reflect in the voice output and video output in an information output unit. The driver and fellow passenger who inputted the destination as the name of a place of propers, such as "Kujuukurihama", the "Shonan seashore", and "Mt. Yatsugatake", for example, oneself, Speech information (for example, musical piece relevant to the "sea") suitable to this destination, and image information The speech information which investigated what (for example, the musical piece relevant to the "sea") was, and was this investigated further Image information (For example, a music album, the collection of musical pieces concerning the same artist, a radio program, etc.) It is dramatically troublesome and difficult for the driver who already got in in the car, or a fellow passenger to set up or operate an information output unit so that [(so that)] for example, a film, electronic books, a TV program, etc. may be outputted. For this reason, the artificial activity itself of choosing suitable speech information and image information as the transit situation of a self-vehicle of going to the destination is not almost actually performed like ****.

[0006] Thus, even if it uses the information output unit and navigation equipment for mobiles which share the various electronic instruments in recently, or are further built in the electronic system for the same mobiles, there is a trouble of the ability not to make the speech information suitable in a migration situation and image information on a mobile output.

[0007] This invention is made in view of the above-mentioned trouble, and let it be a technical problem to offer the computer program which operates a computer as the control unit of the electronic system for mobiles which controls the electronic system for mobiles which comes to contain the information output unit for mobiles, and the

navigation equipment for mobiles possible [an output of the speech information suitable in a migration situation or the image information on a mobile] and the control approach, the electronic system for mobiles equipped with such a control unit, and a list as such a control unit.

[0008]

[Means for Solving the Problem] The information output unit equipped with an output means to output the contents information which contains at least one side among speech information and image information in order that the electronic system for mount of this invention may solve the above-mentioned technical problem, It is the control unit which controls the electronic system for mobiles which comes to contain the navigation equipment which performs navigation actuation concerning the destination which was equipped with the input means which can input the destination in migration of a mobile, and was inputted by this input means. A selection means to choose the contents information which should be outputted during migration of said mobile until it arrives at said destination according to the destination inputted by said input means, It has an output-control means to control said output means to output the contents information chosen by said selection means during migration of said mobile until it arrives at said destination.

[0009] According to the control device of the electronic system for mobiles of this invention, in the electronic system for mobiles, contents information including image information is displayed on the screen of the display with which information output units, such as a car audio system, a car stereo system, a car television system, and a pocket television system, are equipped. Or the voice output of the contents information containing speech information is carried out from the loudspeaker carried, for example in in the car, the head telephone of a pocket audio system, etc. Under the present circumstances, as image information, it is reproduced from record media, such as CD, DVD, and a hard disk, or the text [by which a screen display is carried out] information converted into a video signal besides being the film to which wireless reception was carried out and it restored, a drama, animation, etc. is included. As speech information, it is reproduced from record media, such as CD, DVD, and a hard disk, or the speech information incidental to image information besides the musical piece to which wireless reception was carried out and it restored, the voice-ized text information are included. In addition, in this invention, the information in which an output is possible is called "contents information" in a certain form to a driver, a fellow passenger or a migration person, etc. including such image information and speech information with an information output unit. Moreover, the "mobile" in this invention is a large concept also including human being who walks around with the information output unit, the navigation equipment, or the electronic system for mobiles for others and such mobiles which is the automobile in which the information output unit and navigation equipment for mobiles are carried, a marine vessel, an

airplane, etc.

[0010] On the other hand, in the electronic system for mobiles, navigation actuation of navigation equipment positioning the current position by for example, GPS (Global Positioning System) positioning or independence positioning, calculating the optimal path from the current position to the destination, and displaying on a display, calculating the duration to the destination, displaying the map information near the current position on a display, or it superimposing a current position mark on this is performed. However, the navigation equipment in this invention is equipped with input means, such as the key and mouse which can input the destination in migration of a mobile, a touch panel, and an audio input unit, at least.

[0011] And the contents information according to the destination inputted by the input means is chosen as contents information which should be especially downloaded from a database through means of communications with a selection means to an output among the contents information downloaded through means of communications from the database or memory etc. memorized beforehand, for example. For example, if the destination is inputted as the name of a place of propers, such as "Kujuukurihama", the "Shonan seashore", "Mt. Yatsugatake", "Yokohama", "Chiba", and "Nagano" Or if inputted as the abstract name of a places, such as the "sea", the "seashore", a "port", and a "crest", as contents information according to this destination, works' collection of the music album and artist related to the "sea" will be chosen, or a film, a graphic novel, etc. related to the "sea" will be chosen. Furthermore, the play list or the musical piece list in which the combination of two or more contents information that it responded to the destination inputted while choosing the contents information according to the name of a place in this way and consisting of further two or more musical pieces etc. out of the musical piece and image belonging to an artist, a favorite genre, etc. of the liking beforehand set up according to liking of a driver, a fellow passenger or a migration person, etc. is shown may be created. Furthermore, the tale recorded on the electronic books corresponding to the destination etc. and a tape may be chosen, and the radio program and TV program corresponding to the destination may be chosen. Then, an output means outputs the contents information chosen by the selection means under control by the output-control means during migration of a mobile until it arrives at the destination. Therefore, it is outputted while suitable contents information moves to the destination inputted in navigation equipment.

[0012] Thus, in the electronic system for mobiles containing an information output unit and navigation equipment, the voice output and video output of a mobile suitable in a migration situation become possible.

[0013] In one mode of the electronic system for mobiles of this invention, said selection means chooses 1 or two or more contents information relevant to said inputted destination by searching said inputted destination for the database which

associates the name of a place, 1, or two or more contents information which were set up beforehand as a keyword.

[0014] this voice — the database which associates the name of a place, 1, or two or more contents information if it depends like — for example, the inside of the store built in the electronic system for mount concerned — or it is built in accessible server equipment through means of communications. And if the destination is inputted by the input means, a selection means will choose 1 or two or more contents information relevant to the destination by searching the destination for the database to apply as a keyword. Therefore, by using one database, comparatively simply and promptly, the contents information corresponding to the destination can be chosen and, thereby, the voice output and video output of a mobile suitable in a migration situation become possible.

[0015] Said selection means may consist of this mode so that said contents information may be chosen based on the degree of the relation in two or more contents information in relation to the name of a place of at least 1.

[0016] Thus, on a database, when are constituted and one destination is inputted, when two or more contents information is matched with this, based on the degree of relation, the number of selections of contents information can be restricted to a moderate number, and, thereby, the voice output and video output of a mobile suitable in a migration situation become possible.

[0017] in addition, the information which shows the degree of such relation — each contents information — matching — contents information — or apart from contents information, you may store in a database. Or the selection situation (for example, searched sequence) in a selection means may be matched with the degree of relation, the information which shows the degree of such relation based on a selection situation may be generated, and this generated information may be further stored in a database.

[0018] When said selection means chooses two or more contents information, the order of an output in said those output means is determined, and said output-control means controls said output means by other modes of the electronic system for mobiles of this invention to output said two or more contents information in order of the output for which it opted with said selection means.

[0019] According to this mode, when choosing two or more contents information, a selection means not only chooses them, but determines the order of an output in those output means. For example, the musical piece list and play list containing the order of an output are created. And since an output-control means outputs two or more contents information according to the musical piece list determined in this way, the voice output and video output of a mobile suitable in a migration situation of it become possible.

[0020] Said selection means may consist of modes which also determine this order of

an output so that said order of an output may be determined based on the degree of the relation in two or more contents information in relation to the name of a place of at least 1.

[0021] Thus, since those order of an output will be determined on a database based on the degree of relation when two or more contents information is matched with this when one destination is inputted if constituted, the voice output and video output of a mobile suitable in a migration situation become possible.

[0022] in addition, the information which shows the degree of such relation — each contents information — matching — contents information — or apart from contents information, you may store in a database. Or the selection situation (for example, searched sequence) in a selection means may be matched with the degree of relation, the information which shows the degree of such relation based on a selection situation may be generated, and this generated information may be further stored in a database.

[0023] Said selection means may consist of modes which also determine this order of an output so that the thing which has the strong degree of relation with said destination may determine that it is outputted by said order of an output near said destination among said two or more contents information.

[0024] Thus, since the contents information that relation with the destination is strong will be outputted so that the destination is approached if constituted, the voice output and video output of a mobile suitable in a migration situation become possible.

[0025] In other modes of the electronic system for mobiles of this invention Said selection means the 1st database which associates the name of a place, 1, or two or more related keywords which were set up beforehand by searching said inputted destination as a keyword 1 or two or more related keywords relevant to said inputted destination are chosen. 1 or two or more contents information relevant to said selected, related keyword are chosen by searching said selected, related keyword for the 2nd database which associates the related keyword, 1, or two or more contents information which were set up beforehand as a keyword.

[0026] this voice — the 1st database which associates the name of a place, 1, or two or more related keywords if it depends like — for example, the inside of the store built in the electronic system for mount concerned — or it is built in accessible server equipment through means of communications. And if the destination is inputted by the input means, a selection means will choose 1 or two or more related keywords relevant to the destination by searching the destination for the 1st database to apply as a keyword. The abstract name of a places, such as the "sea", the "seashore", a "port", a "crest", a "hot spring", and a "temple", are sufficient as a related keyword, and they may be abstract names, such as "skiing", "a camp", a "film", a "ship", and a "marriage ceremony." furthermore, the 2nd database which associates a related keyword, 1, or two or more contents information — for example, the inside of the

store built in the electronic system for mount concerned -- or it is built in accessible server equipment through means of communications. And after choosing a related keyword from the 1st database, when a selection means searches the 2nd database by making this into a keyword shortly, 1 or two or more contents information relevant to a related keyword are chosen. Therefore, by using two databases, comparatively simply and promptly, the contents information corresponding to the destination can be chosen and, thereby, the voice output and video output of a mobile suitable in a migration situation become possible.

[0027] Said selection means may consist of modes concerning these 1st and 2nd databases so that said related keyword may be chosen based on the degree of the relation in two or more related keywords in relation to the name of a place of at least 1.

[0028] Thus, on the 1st database, when are constituted and one destination is inputted, when two or more related keywords are matched with this, based on the degree of relation, the number of selections of related keyword information can be restricted to a moderate number.

[0029] in addition, the information which shows the degree of such relation -- each related keyword -- matching -- a related keyword -- or apart from a related keyword, you may store in the 1st database. Or the selection situation (for example, searched sequence) in a selection means may be matched with the degree of relation, the information which shows the degree of such relation based on a selection situation may be generated, and this generated information may be further stored in the 1st database.

[0030] Said selection means may consist of modes concerning these 1st and 2nd databases so that said contents information may be chosen based on the degree of the relation in two or more contents information in relation to the related keyword of at least 1.

[0031] Thus, on the 2nd database, if constituted, after a related keyword is chosen on the 1st database, when two or more contents information is matched with this, based on the degree of relation, the number of selections of contents information can be restricted to a moderate number.

[0032] in addition, the information which shows the degree of such relation -- each contents information -- matching -- contents information -- or apart from contents information, you may store in the 2nd database. Or the selection situation (for example, searched sequence) in a selection means may be matched with the degree of relation, the information which shows the degree of such relation based on a selection situation may be generated, and this generated information may be further stored in the 2nd database.

[0033] When said selection means chooses two or more contents information, the order of an output in said those output means may be determined, and said

output-control means may consist of modes concerning these 1st and 2nd databases so that said output means may be controlled to output said two or more contents information in order of the output for which it opted with said selection means.

[0034] Thus, if constituted, when choosing two or more contents information, a selection means not only chooses them, but will determine the order of an output in those output means. For example, the musical piece list and play list containing the order of an output are created. And since an output-control means outputs two or more contents information according to the musical piece list determined in this way, the voice output and video output of a mobile suitable in a migration situation of it become possible.

[0035] When also making the decision of this order of an output, said selection means may be constituted so that said order of an output may be determined based on the degree of the relation in two or more related keywords in relation to the name of a place of at least 1.

[0036] Thus, when are constituted, one destination is inputted and two or more related keywords are matched with this on the 1st database, since the order of an output of the contents information further matched with those related keywords based on the degree of relation is determined, the voice output and video output of a mobile suitable in a migration situation become possible.

[0037] in addition, the information which shows the degree of such relation — each related keyword — matching — a related keyword — or apart from a related keyword, you may store in the 1st database. Or the selection situation (for example, searched sequence) in a selection means may be matched with the degree of relation, the information which shows the degree of such relation based on a selection situation may be generated, and this generated information may be further stored in the 1st or 2nd database.

[0038] When also making the decision of this order of an output, said selection means may be constituted so that said order of an output may be determined based on the degree of the relation in two or more contents information in relation to the related keyword of at least 1.

[0039] Thus, since the order of an output of those contents information is determined based on the degree of relation when two or more contents information is matched to the related keyword chosen on the 1st database, if constituted, the voice output and video output of a mobile suitable in a migration situation become possible.

[0040] in addition, the information which shows the degree of such relation — each contents information — matching — contents information — or apart from contents information, you may store in the 2nd database. Or the selection situation (for example, searched sequence) in a selection means may be matched with the degree of relation, the information which shows the degree of such relation based on a selection situation may be generated, and this generated information may be further stored in

the 2nd database.

[0041] When also making the decision of this order of an output, said selection means may be constituted so that the thing which has the strong degree of relation with said destination may determine that it is outputted by said order of an output near said destination among said two or more contents information.

[0042] Thus, since the contents information that relation with the destination is strong will be outputted so that the destination is approached if constituted, the voice output and video output of a mobile suitable in a migration situation become possible.

[0043] After choosing the related keyword of 1, said selection means may consist of modes concerning the 1st and 2nd above-mentioned databases by searching said related keyword of selected 1 for said 1st database as a keyword so that 1 relevant to said related keyword of selected 1 or two or more of other related keywords may be chosen further.

[0044] Thus, if constituted, 1 relevant to this related keyword of selected 1 or two or more of other related keywords will be further chosen by searching the 1st database with a selection means first by choosing the related keyword of 1 relevant to the destination, and searching the 1st database by making this related keyword of selected 1 into a keyword further after that. That is, it is not directly connected with the destination but the related keyword related indirectly so to speak is chosen through the related keyword of 1. Therefore, when the related keyword of a considerable amount and also the contents information relevant to this cannot be chosen to the destination of 1, the lack of contents information relevant to the destination can be efficiently avoided by including the contents information relevant to the related keyword related indirectly in this way in the object for selection. In addition, when the related keyword and also contents information on a considerable amount can be chosen to the destination of 1, there is not necessarily no need of searching the 1st database by making such a once chosen related keyword into the further keyword. On the contrary, when the related keyword and also contents information on a considerable amount cannot be chosen to the destination of one even after searching the 1st database further by making a related keyword into a keyword, it is also possible to repeat retrieval of the 1st database by making the searched related keyword into a keyword. In addition, when repeating a related keyword as a keyword and performing it in this way, it is also possible to use as information which shows the degree of the relation which mentioned above the information on whether it was searched by what time.

[0045] In other modes of the control device of the electronic system for mobiles of this invention, said navigation equipment is further equipped with a calculation means to compute the duration to the destination inputted by said input means from the current position of said mobile, and, in addition to said destination, said selection means chooses said contents information according to said computed duration.

[0046] According to this mode, if the destination is inputted by the input means, the calculation means with which navigation equipment is equipped will compute the duration from the current position of a mobile to the destination. Then, in addition to the destination, a selection means chooses contents information according to this computed duration. For example, the destination is "Kujuukurihama", and if a duration is 2 hours, the musical piece list which consists of two or more contents information in relation to the "sea" for 2 hour will be created.

[0047] Said navigation equipment is further equipped with a monitor means to supervise whether migration of said mobile is as planned, and according to the monitor result by said monitor means, when migration of said mobile is not as planned, it may constitute said selection means from this mode so that modification may be added to the contents information which should be outputted after current time.

[0048] According to this mode, the monitor means with which navigation equipment is equipped during migration of a mobile supervises whether that migration is as planned. And according to the monitor result by the monitor means, when migration of a mobile is not as planned, a selection means adds modification to the contents information which should be outputted after current time. For example, the destination is "Kujuukurihama", and if migration of a mobile is behind the schedule, an addition on the musical piece list of 1 or two or more contents information relevant to the "sea" etc. will be performed. Or the destination is "Kujuukurihama", and if migration of a mobile is earlier than a schedule, the infanticide from the musical piece list of 1 or two or more contents information relevant to the "sea" etc. will be performed. Especially, among two or more contents [like / the above-mentioned] information, when determining the order of an output that the thing which has the strong degree of relation with the destination is outputted near the destination, even if deviation arises in a duration, a plan to output near the destination the contents information that the degree of relation with the destination is strong can be maintained by performing the infanticide from an addition on a musical piece list, and a musical piece list etc. in this way.

[0049] The computer program of this invention operates a computer as a control unit (however, the various modes are also included) of the electronic system for mobiles of this invention mentioned above, in order to solve the above-mentioned technical problem.

[0050] If the computer program concerned is read into a computer and performed from record media, such as CD-ROM (Compact Disc Read Only Memory) which stores the computer program concerned according to the computer program of this invention, DVD-ROM (DVD Read Only Memory), and a hard disk, or if it is made to perform after making a computer download the computer program concerned through means of communications, the control unit of the electronic system for mobiles of this invention mentioned above can be realized comparatively easily. Moreover, it is also

possible to transmit such a computer program from server equipment with other data, such as navigation, an application program required for a voice video output, and map data, speech information data, image information data.

[0051] The electronic system for mobiles of this invention comes to contain the control device (however, for the various modes to also be included), said information output unit, and said navigation equipment of the electronic system for mobiles of this invention mentioned above, in order to solve the above-mentioned technical problem.

[0052] Since it comes to contain the control unit of the electronic system for mobiles of this invention mentioned above according to the electronic system for mobiles of this invention, the voice output and video output of a mobile suitable in a migration situation become possible.

[0053] In order that the control approach of the electronic system for mobiles of this invention may solve the above-mentioned technical problem The information output unit equipped with an output means to output the contents information which contains at least one side among speech information and image information, It is the control approach which controls the electronic system for mobiles which comes to contain the navigation equipment which performs navigation actuation concerning the destination which was equipped with the input means which can input the destination in migration of a mobile, and was inputted by this input means. The selection process which chooses the contents information which should be outputted during migration of said mobile until it arrives at said destination according to the destination inputted by said input means, It has the output-control process which controls said output means to output the contents information chosen by said selection process during migration of said mobile until it arrives at said destination.

[0054] According to the control approach of the electronic system for mobiles of this invention, in the electronic system for mobiles containing an information output unit and navigation equipment, the voice output and video output of a mobile suitable in a migration situation become possible like the case of the control device of the electronic system for mobiles of this invention mentioned above.

[0055] Such an operation and other gains of this invention are made clear from the gestalt of the operation explained below.

[0056]

[Embodiment of the Invention] Hereafter, the gestalt of operation of this invention is explained based on a drawing. In addition, each operation gestalt explained below builds the electronic system for mobiles of this invention as electronic system for mount.

[0057] (The 1st operation gestalt) The electronic system for mount of the 1st operation gestalt is first explained with reference to drawing 3 from drawing 1 . Drawing 1 is the block diagram of the electronic system for mount of the 1st operation gestalt of this invention, and drawing 2 is the conceptual diagram showing the data

configuration in the musical piece database used with the 1st operation gestalt. Drawing 3 is a flow chart which shows the actuation in the 1st operation gestalt.

[0058] As shown in drawing 1 , the electronic system for mount of this operation gestalt is equipped with independence positioning equipment 10, the GPS receiver 18, a system controller 20, CD-ROM drive 31, DVD-ROM drive 32, a hard disk unit 36, a communications interface 37, a communication device 38, the display unit 40, the voice output unit 50, and an input unit 60, and is constituted.

[0059] Independence positioning equipment 10 is constituted including the acceleration sensor 11, the angular-velocity sensor 12, and the rate sensor 13. An acceleration sensor 11 consists of a piezoelectric device, detects the acceleration of a car, and outputs acceleration data. The angular-velocity sensor 12 consists for example, of an oscillating gyroscope, detects the angular velocity of the car at the time of directional change of a car, and outputs angular-velocity data and relative bearing data.

[0060] The rate sensor 13 detects a revolution of the axle of a car mechanically, magnetically, or optically, and consists a pulse signal slack vehicle speed pulse of generating ************ for every revolution of the predetermined include angle in an axle.

[0061] The GPS receiver 18 is a part which receives the electric wave 19 containing the data for positioning from two or more GPS Satellites which should be used in order to detect the absolute location of a car from the LAT, LONG information, etc. which gets down and conveys circuit data.

[0062] The system controller 20 contains an interface 21, and CPU (Central Processing Unit)22, ROM (Read Only Memory)23 and RAM (Random AccessMemory)24, and it is constituted so that the whole electronic system for mount may be controlled.

[0063] An interface 21 performs interface actuation with the GPS receiver 18 in an acceleration sensor 11, the angular-velocity sensor 12, and rate sensor 13 list. And acceleration data besides a vehicle speed pulse, relative bearing data, angular-velocity data, GPS positioning data, absolute bearing data, etc. are inputted into a system controller 20 from these. CPU22 controls the system controller 20 whole. ROM23 has the nonvolatile memory in which the control program which controls a system controller 20 was stored and which is not illustrated. RAM24 is stored possible [read-out of various data, such as path data beforehand set up by the user through the input device 60,], or offers working area to CPU22.

[0064] A system controller 20, CD-ROM drive 31, DVD-ROM drive 32, a hard disk unit 36, the communications interface 37, the display unit 40, the voice output unit 50, and the input device 60 are mutually connected through the bus line 30.

[0065] CD-ROM drive 31 and DVD-ROM drive 32 read and output the control program corresponding to the various data and each below-mentioned operation

gestalt containing the number of lanes, the width of road, etc., such as route data, from CD33 and DVD34 under control of a system controller 20, respectively.

[0066] Furthermore, CD-ROM drive 31 and DVD-ROM drive 32 read the voice data and image data which constitute an example of contents information from CD33 and DVD34 under control of a system controller 20, respectively.

[0067] in addition, CD-ROM drive 31 and DVD-ROM drive 32 —— either —— you may prepare —— CD and DVD —— a compatible drive may be prepared.

[0068] A hard disk unit 36 stores the voice data and image data which were read from CD-ROM drive 31 or DVD-ROM drive 32, or stores the data containing map data etc. for navigation. Thereby, reading the map data on CD-ROM33 or DVD-ROM34, and performing navigation actuation, the voice data and image data which were stored in the hard disk unit 36 are read, and a voice output and a video output become possible, for example. Or reading the voice data and image data on CD-ROM33 or DVD-ROM34, and performing a voice output and a video output, the map data stored in the hard disk unit 36 are read, and navigation actuation is attained. Furthermore, voice data, image data or map data downloaded with the communication device 38 is stored in the hard disk unit 36, this is read at the event of subsequent arbitration and an output becomes possible.

[0069] It consists of a cellular phone and the communication device 38 is constituted through the communications interface 37 which constitutes a modem etc. possible [download of all or some of databases of a predetermined class about these] for voice data, image data, or map data.

[0070] The display unit 40 displays various indicative datas under control of a system controller 20. The graphic controller 41 which controls the display unit 40 whole based on the control data with which the display unit 40 is sent from CPU22 through a bus line 30, The buffer memory 42 which consists of memory, such as VRAM (Video RAM), and memorizes temporarily the image information in which a real time display is possible, It is based on the image data outputted from a graphic controller 41. Small LCD (Liquid Crystal Display: liquid crystal display), It has the display and control section 43 which carries out the display control of the display 44 of EL (Electro-Luminescence) display, CRT (Cathode Ray Tube), etc., and a display 44, and is constituted. A display 44 consists of a liquid crystal display of about 5-10 inches of vertical angles etc., and it is equipped with it near the front panel in the car.

[0071] The voice output unit 50 is equipped with the bottom of control of a system controller 20, CD-ROM drive 31, DVD-ROM32 or D/A converter 51 that performs D/A (Digital to Analog) conversion of the voice digital data sent through a bus line 30 from RAM24 grade, the amplifier (AMP) 52 which amplifies the voice analog signal outputted from D/A converter 51, and the loudspeaker 53 which changes the amplified voice analog signal into voice, and is outputted to in the car, and is constituted.

[0072] The input device 60 consists of the key for inputting various commands and data, a switch, a carbon button, remote control, an audio input unit, etc. An input device 16 is arranged the front panel of the body of the electronic system for mount concerned carried in in the car, and around a display 44.

[0073] As explained above, in the electronic system for mount of this operation gestalt Independence positioning equipment 10, the GPS receiver 18, a system controller 20, CD-ROM drive 31, DVD-ROM drive 32, a hard disk unit 36, a communications interface 37, a communication device 38, the display unit 40, the voice output unit 50 And while the navigation system is built from the input device 60 etc. A system controller 20, CD-ROM drive 31, The car audio system is built from DVD-ROM drive 32, a hard disk unit 36, a communications interface 37, the communication device 38, the display unit 40, the voice output unit 50, the input device 60, etc. That is, two or more components are shared by the navigation system and the car audio system, and unific control by the same system controller 20 is performed as the one whole electronic system for mount.

[0074] In addition, especially in the electronic system for mount of this operation gestalt, the musical piece database is built in the hard disk unit 36.

[0075] For example, as shown in drawing 2 (a), the contents information which comes to contain the speech information for performing a musical piece is the separated form, and it acts as the ** student of the musical piece database 100 by the related name of a place 1, the related name of a place 2, --, much attribute information files 101, such as performance time amount, a genre, a performance artist, and words, being stored in the format matched with the title of for example, each musical piece. Such a musical piece database 100 is available for example, on the Internet. Or it is also possible to act as the ** student of musical piece database 100' which comes to contain two or more contents information 200 by storing in the header 102 of the contents information 200 which comes to contain in drawing 2 (b) the speech information which corresponds such an attribute information file 101 so that it may be shown. In addition, relation is beforehand set as the musical piece as the deep name of a place, and the related name of a places 1 and 2 and -- may include additionally the information which shows the degree of relation, and may specify that the related name of a places 1 and 2 and the sequence of -- correspond in order of the degree of relation.

[0076] However, you may constitute so that the musical piece database which replaced with building such a musical piece database 100 or 100' in a hard disk unit 36, or was built by the system controller 20 in addition in inside, such as server equipment which is in a remote place through a communication device 38, may be accessed.

[0077] In addition, it cannot be overemphasized that the electronic system for mount is equipped with the various elements which constitute well-known car audio systems and car television systems, such as a radio aerial, a radio tuner, a TV antenna, a

television tuner, a cassette deck, and MD drive, in addition to the component illustrated to drawing 1 , and it may be constituted.

[0078] Data processing in the 1st operation gestalt and each operation gestalt mentioned later is performed in CPU22 shown mainly in drawing 1 . More specifically, the computer program for control of a navigation system, the computer program for car audio system controls, and the computer program for database control are mainly performed in CPU22. And the agent who has the function which creates automatically the musical piece list or play list according to the destination is also logically built by the computer program in CPU22 [in the electronic system for mount]. Moreover, such a computer program may be stored in ROM23, CD-ROM31, or DVD-ROM32, and may be downloaded in RAM42 and hard disk unit 36 grade through the communication devices 38, such as a modem and a cellular phone.

[0079] Next, a series of processings in the electronic system for mount of the 1st operation gestalt constituted as mentioned above which carry out automatic creation of the musical piece list according to the destination, and reproduce a musical piece according to this are explained with reference to the flow chart of drawing 3 .

[0080] In drawing 3 , setting out of the mode which carries out automatic creation of the play list by the mode change through an input unit 60 etc. according to the destination confirms whether the destination was inputted through the input unit 60 as part of the alter operation on a navigation system (step S1). This input is performed by a key input, the selection input by the carbon button on a screen, voice input, etc., for example, "Kujuukurihama" is inputted as a destination. Moreover, as an input of the destination in step S1, you may be the abstract name of a places, such as the "sea", the "seashore", a "port", and a "crest."

[0081] If the input of the destination is detected (step S1: being), the agent for play list automatic creation built in CPU22 will search the musical piece database 100 shown in drawing 2 by making the inputted destination into a retrieval keyword. under the present circumstances, good also considering the related name of a place 1 in the attribute information file 101, the related name of a place 2, and -- as an object for retrieval -- carrying out -- this -- replacing with -- or -- in addition, it is good also considering the text data which constitutes words as an object for retrieval. And this retrieval is performed until the title corresponding to the contents information on sufficient amount to output between durations (for example, 2 hours) until it arrives at the destination separately computed by the navigation system is searched, or until retrieval of all musical piece databases is completed. The musical piece list or play list which consists of two or more musical pieces searched by this is created (step S2). In addition, the retrieval in step S2 may narrow down the object for retrieval to the musical piece which belongs to an artist, a favorite genre, etc. of the liking set up according to liking of a driver, a fellow passenger or a migration person, etc. beforehand.

[0082] Next, the car audio system carries out sequential playback of the musical piece according to the play list created in this way (step S3).

[0083] Thus, according to the electronic system for mount of the 1st operation gestalt, a suitable musical piece is reproduced by the transit situation of a self-vehicle of going to the destination.

[0084] With the 1st operation gestalt explained above, it chooses preferably based on the degree of the relation in two or more musical piece (title) information in relation to the name of a place of 1 in the case of retrieval of step S2. That is, although a play list may be created using two or more musical pieces (title) corresponding to a retrieval result at random in case the play list only of parts which are sufficient for a duration is created, as for the large thing of the degree of relation, it is desirable to make it not leak from a play list if possible. In the musical piece database 100 shown in drawing 2 , or 100', the degree of such relation may follow the related name of a places 1 and 2 included in each attribute information, and the information which shows the degree of the relation added to --, and it may follow in order of this data on the assumption that the thing of -- prescribed that sequence corresponds in order of the degree of relation, the related name of a places 1 and 2 and.

[0085] Furthermore, the agent who does automatic creation of the play list may consist of 1st operation gestalten so that the playback sequence of each musical piece (title) it not only chooses two or more musical pieces (title), but chosen based on the degree of the relation mentioned above, for example may be determined. Furthermore, you may constitute so that the thing which has the strong degree of relation with the destination may determine more nearly again that it is outputted by playback sequence near the destination. Thus, a musical piece with strong relation with the destination is reproduced, so that the destination will be approached, if constituted.

[0086] (The 2nd operation gestalt) Next, the 2nd operation gestalt of this invention is explained with reference to drawing 7 from drawing 4 . It is the flow chart which shows actuation [in / here / in drawing 4 / the 2nd operation gestalt], and drawing 5 is the conceptual diagram showing the actuation by the side of the equipment in the 2nd operation gestalt shown at drawing 4 with time according to a car audio system in an agent, the 1st database, and the 2nd database list. Drawing 6 is the conceptual diagram showing the configuration of the 1st database for related retrieval by keyword, and drawing 7 is the conceptual diagram showing the configuration of the 2nd database for musical piece retrieval. In addition, the hardware configuration of the 2nd operation gestalt is the same as that of the thing of the 1st operation gestalt shown in drawing 1 .

[0087] With the 2nd operation gestalt, as notionally shown in drawing 5 , the agent 221 who does automatic creation of the play list according to the destination is logically built in CPU22, the 1st database 301 is formed in the related retrieval by keyword

relevant to the destination, and the 2nd database 302 is formed in the musical piece retrieval relevant to a related keyword. In addition, while the sense of the arrow head passed about processing between four components between the vertical lines extended from four components shows the sense of processing, the content of processing is shown to each arrow-head upside by drawing 5 , and it is shown about the processing performed independently [four components] any one by it on the vertical line extended from four components. Furthermore, in drawing 4 and drawing 5 , it goes to the bottom from an upside as time flow of processing.

[0088] Using two databases, the agent from whom the 2nd operation gestalt constitutes an example of a selection means is constituted so that selection of a musical piece and creation of a play list may be performed. About other configurations, it is the same as that of the 1st operation gestalt mentioned above.

[0089] In drawing 4 , the destination is first inputted by the man (operator) 220 through an input unit 60 as part of the alter operation on a navigation system (step S11). This input is performed by a key input, the selection input by the carbon button on a screen, voice input, etc., for example, "Kujuukurihama" is inputted as a destination.

[0090] The agent for play list automatic creation built in CPU22 by the carrier beam equipment 300 side in this searches a related keyword by making the inputted destination into a retrieval keyword (step S12).

[0091] Then, retrieval is again repeated by making into a retrieval keyword the related keyword by which retrieval result slack retrieval was carried out (step S13). The repeat of this retrieval is continued until a new related keyword is no longer searched, even if it repeats retrieval.

[0092] Next, since the more related keyword searched first is close to the original retrieval keyword slack destination, the musical piece relevant to the related keyword relevant to this destination keyword is directly selected behind a play list (sequence outputted to **** which arrives at the destination) (step S14). On the other hand, since the more related keyword searched at the end is far from the original retrieval keyword slack destination, the musical piece which related to this destination keyword indirectly is selected ahead of a play list (sequence which leaves a its present location and is outputted immediately). A musical piece list or a play list is automatically created these results by the agent for play list automatic creation built in CPU22.

[0093] Next, the car audio system carries out sequential playback of the musical piece according to the play list created in this way (step S15). For this reason, a musical piece with the high degree relevant to the object value is reproduced, so that sequential playback of the musical piece relevant to the destination is carried out and it moreover approaches during transit of a self-vehicle at the destination.

[0094] The retrieval of a database and the creation of a play list in S14 are further explained to a detail with reference to drawing 5 to drawing 7 from step S12

mentioned above.

[0095] In drawing 5 , the keyword which shows the destination through an input unit 60 by the man (operator) 220 as part of automatic creation actuation of the play list by the agent 221 regardless of navigation actuation as part of the alter operation on a navigation system is inputted first (step S21). This input is performed by a key input, the selection input by the carbon button on a screen, voice input, etc. Here, "Kujuukurihama" (name of a place of a proper), the "sea" (abstract name of a place), "sea bathing" (general keyword relevant to the name of a place), etc. are inputted as a keyword which shows the destination.

[0096] The processing which searches a related keyword is started from the keyword as which this was inputted into the carrier beam agent 221 at step S21 (step S22). For this reason, the keyword inputted at step S21 is first set as a retrieval keyword (step S23). And to the 1st database 301, a retrieval demand is performed and a related keyword is searched (step S24). Corresponding to this, a retrieval result is returned to an agent 221 from the 1st database 301 (step S25). Here, related keywords, such as a "brake shoe", a "wave", the "seashore", a "port", and "Chiba", are returned from the 1st database 301 at step S25 to retrieval keyword slack "Kujuukurihama", "sea bathing", etc. by which the retrieval demand was carried out at step S24.

[0097] As shown in drawing 6 here, a keyword is put in a database and, as for that structure, the keyword related to one keyword has [the 1st database 301] further two or more 1 or those with two or more, and these structures. By drawing 6 , n is associated and registered and, more specifically, it becomes the input keywords 1 and 2, −−, the related keywords 1 and 2 relevant to each of n, −−, order with this order of registration strong [related reinforcement with each input keyword].

[0098] In response to return and this retrieval result, an agent 221 saves again this related keyword by which retrieval result slack retrieval was carried out at drawing 5 (step S26).

[0099] Then, an agent 221 confirms whether all the retrieval by keyword in the 1st database 301 was completed (step S27). And if it has not completed, shortly, the retrieval result obtained at step S25 will be set as a retrieval keyword (step S28), and processing of S27 will be repeated from step S24.

[0100] In step S27, when all the retrieval by keyword in the 1st database 301 is completed, it branches to step S29.

[0101] Then, in steps S24 and S25, the processing which searches the 2nd database is started in order of the searched related keyword (step S29). For this reason, first, to the 2nd database 302, a retrieval demand is performed and a title or an identification number of a musical piece corresponding to a related keyword etc. is searched with step S30 (step S30). Corresponding to this, a retrieval result is returned to an agent 221 from the 2nd database 302 (step S31). Here, the musical piece corresponding to related keywords, such as related keyword slack "a brake

shoe" saved at step S26, a "wave", the "seashore", a "port", and "Chiba", is returned from the 2nd database 302 at step S31.

[0102] As shown in drawing 7 here, the 2nd database 302 consists of keywords for example, relevant to music information (a music name (title), an artist name, a genre, in addition to this). For every music, the keyword (music information, input item) and the agent analysis result are registered into the 2nd database 302, and, as for the keyword, music information and an input item are registered into it. For example, such music information is downloaded via the Internet. And the keyword into which people can register an input item freely is registered. On the other hand, when registering a hard disk two pole, an agent analyzes the music to an agent analysis result, and the result is registered into it. For this reason, the music relevant to a retrieval keyword (1 or partial coincidence) can be searched. It follows, for example, two or more music relevant to "Kujuukurihama" is searched to one input keywords, such as "Kujuukurihama."

[0103] In response to return and a retrieval result, an agent 221 saves again the identification number of this musical piece (title) by which retrieval result slack retrieval was carried out, or a musical piece etc. at drawing 5 (step S32).

[0104] Then, an agent 221 confirms whether the musical piece retrieval in the 2nd database 302 which uses all related keywords was completed (step S33). And if it has not completed, processing of S33 will be repeated from step S30.

[0105] In step S33, when the musical piece retrieval in the 2nd database 302 using all related keywords is completed, playback directions are ordered to the car audio system 303 with the play list saved by considering as the retrieval result (step S32) by the agent 221 (step S34).

[0106] Under the present circumstances, since the more related keyword searched first is close to the original retrieval keyword slack input keyword (destination), the retrieval result saved at step S32 serves as a play list with which two or more musical pieces were arranged by the deep order of relation. Namely, an agent 221 is the form of a play list and should just hand the retrieval result saved at step S32 to the car audio system 303. It is desirable that relation with an input keyword selects the musical piece relevant to a deeper related keyword here behind a play list (sequence outputted to **** which arrives at the destination).

[0107] Sequential playback of the musical piece is carried out according to the play list with which the carrier beam car audio system 303 was created of the agent 221 in this (step S35). For this reason, a musical piece with the high degree relevant to the object value is reproduced, so that sequential playback of the musical piece relevant to an input keyword (destination) is carried out and it moreover approaches during transit of a self-vehicle at the destination.

[0108] As mentioned above, according to the 2nd operation gestalt, by using two databases, the musical piece corresponding to the destination or an input keyword

can be chosen, and, thereby, the voice output and video output of a self-vehicle suitable in a transit situation become possible comparatively simply and promptly.

[0109] An agent 221 is S27 from step S23, and especially with the 2nd operation gestalt, since he searches a retrieval result slack related keyword as a new retrieval keyword, it can search directly from the related keyword relevant to an input keyword to the related keyword related indirectly, and even if the duration to the destination is long, he can reduce possibility that the musical pieces which should be reproduced run short. Moreover, since the activity which determines the sequence under play list based on the degree of relation since the searched sequence shows the degree of relation as it is is dramatically easy and ends, it is very advantageous technically. However, when the related keyword of a considerable amount is searched with step S25 to an input keyword, retrieval of the 1st further database 301 as a retrieval keyword may exclude such a retrieval result.

[0110] In addition, although the keyword inputted at step S21 may be the name of a places (for example, "Kujuukurihama", "Yokohama", etc.) or the abstract name of a place (for example, the "sea", a "beach", the "seashore") of a proper which shows the destination, they may be the name of a places, such as "skiing", "a camp", a "film", a "ship", and a "marriage ceremony", and a abstract name which has relevance somewhat.

[0111] (Deformation gestalt) although each operation gestalt explained above explains for convenience the example of explanation which contents information becomes from speech information — contents information — the combination of image information, or speech information and image information — even if it is text information (or text-ized image information) etc. further, as long as contents information has a certain relevance directly or indirectly with a ground, this invention is applicable similarly.

[0112] For example, if the electronic system for mount of this invention is applied when offering image information for the fellow passengers of a backseat or a passenger seat, creation of the image list which doubled with the destination is possible. Like the 1st or 2nd operation gestalt, if it is a film, it will be the film saved at the DVD list or the hard disk, and, more specifically, the thing suitable for the destination will be chosen automatically. In this case, when arriving earlier than a schedule, you may constitute from performing **** playback, infanticide playback, etc. so that it may end according to the arrival time.

[0113] Furthermore, if the electronic system for mount of this invention is applied when offering text information, such as a book (Electronic Book) and comics, the book which was in the destination will be chosen automatically.

[0114] Furthermore, the musical piece list is created according to the duration to the destination computed by the navigation system in each operation gestalt mentioned above again, corresponding to the destination inputted into the navigation system. In

addition, the function as a monitor means to supervise whether migration of a self-vehicle is as planned is given to a navigation system, and according to the monitor result of this, when transit of a self-vehicle is not as planned, the agent for automatic creation of a musical piece list may constitute so that modification may be added to the once created musical piece list. If transit of a self-vehicle is behind the schedule, an addition on a current musical piece list etc. will more specifically be performed, and if transit of a self-vehicle is earlier than a schedule, the infanticide from a musical piece list etc. will be performed. Thereby, even if deviation arises in a duration, a musical piece with the strongest degree of relation with the destination is outputted near the destination like the above-mentioned.

[0115] Although processing which chooses contents information within the electronic system for mount is performed with each above-mentioned operation gestalt, it is also possible to utilize the communication device 38 in the electronic system for mount, to communicate with servers, such as the Internet, and to perform such processing. In that case, the agent (CPU22 and its program realize actually) virtually built in the electronic system for mount by the above-mentioned explanation can be built on the server of the Internet, and it can consider as the server which has the optional feature of contents information, or the creation function of a musical piece list. The input concerning the destination by a driver etc., a further favorite artist and a genre, the musical piece that should be outputted at the time of a special situation is transmitted to the server concerned through a communication device 38, and a corresponding musical piece list etc. is transmitted to the electronic system for mount from a server. And in the electronic system for mount, the output of contents information is performed according to this received musical piece list. In addition, it is also possible to perform communicating with a server using a communication device 38 also about the navigation function concerning the path planning after the destination was inputted, path advice, etc.

[0116] The electronic system for mobiles of this invention can also be applied to the navigation equipment for the pedestrians using not the object for mount but a Personal Digital Assistant, a cellular phone, etc. like each above-mentioned operation gestalt. In that case, what is necessary is just to have contents regenerative functions, such as a music regenerative function, in a Personal Digital Assistant, a cellular phone, etc.

[0117] This invention is not restricted to the operation gestalt mentioned above, and can be suitably changed in the range which is not contrary to the summary or thought of invention which can be read in a claim and the whole description, and a computer program is also contained in the control unit of the electronic system for mobiles accompanied by such modification and the control approach, the electronic system for mobiles, and a list in the technical range of this invention.

[0118]

[Effect of the Invention] As explained to the detail above, according to this invention, in the electronic system for mobiles which comes to contain the information output unit for mobiles, such as a car audio system, and the navigation equipment for mobiles, suitable speech information and image information can be outputted to the migration situation of a mobile.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is the block diagram showing the configuration of the electronic system for mount of the 1st operation gestalt of this invention.

[Drawing 2] It is the conceptual diagram showing the data configuration in the musical piece database used with the 1st operation gestalt.

[Drawing 3] It is the flow chart which shows the actuation in the 1st operation gestalt.

[Drawing 4] It is the flow chart which shows the actuation in the 2nd operation gestalt of this invention.

[Drawing 5] It is the flow chart which shows the actuation in the 2nd operation gestalt of this invention according to an agent, the 1st database, and the 2nd database with time.

[Drawing 6] It is the conceptual diagram showing the 1st database structure in the 2nd operation gestalt.

[Drawing 7] It is the conceptual diagram showing the 2nd database structure in the 2nd operation gestalt.

[Description of Notations]

10 —— Independence positioning equipment

11 —— Acceleration sensor

12 —— Angular-velocity sensor

13 —— Rate sensor

18 —— GPS positioning equipment

19 —— Electric wave

20 —— System controller

21 —— Interface

22 —— CPU

23 —— ROM

24 —— RAM

30 —— Bus

31 —— CD-ROM drive

32 —— DVD-ROM drive

36 -- Hard disk unit

37 -- Communications interface

38 -- Communication device

40 -- Display unit

50 -- Voice output unit

60 -- Input unit

100 -- Musical piece database

221 -- Agent

301 -- The 1st database

302 -- The 2nd database